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JULY 17, 1922 Issued Weekly PRICE 10 CENTS

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VOLUME XIII
Number 3

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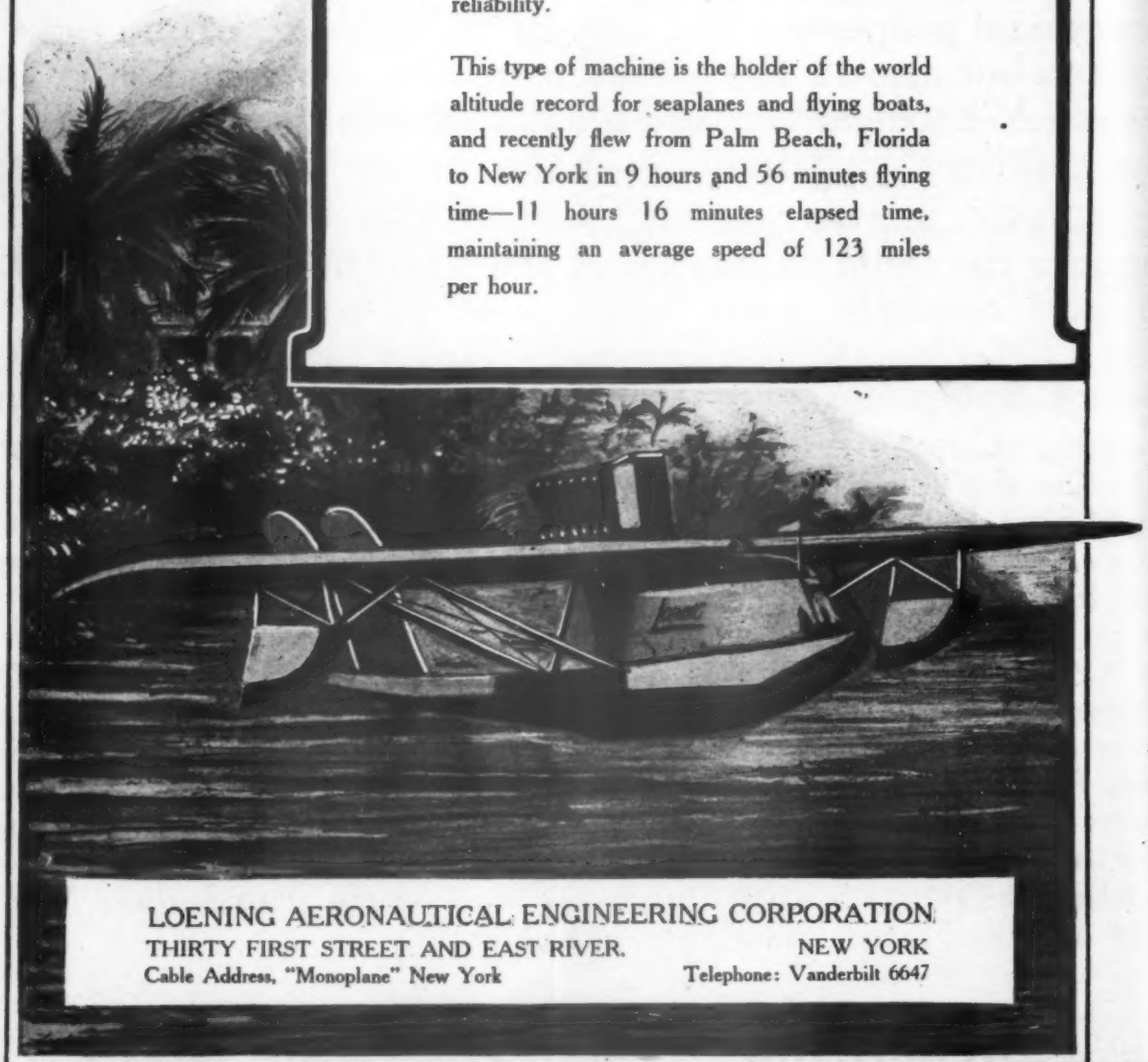

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JULY 17, 1922

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THOMAS-MORSE AIRCRAFT CORPORATION

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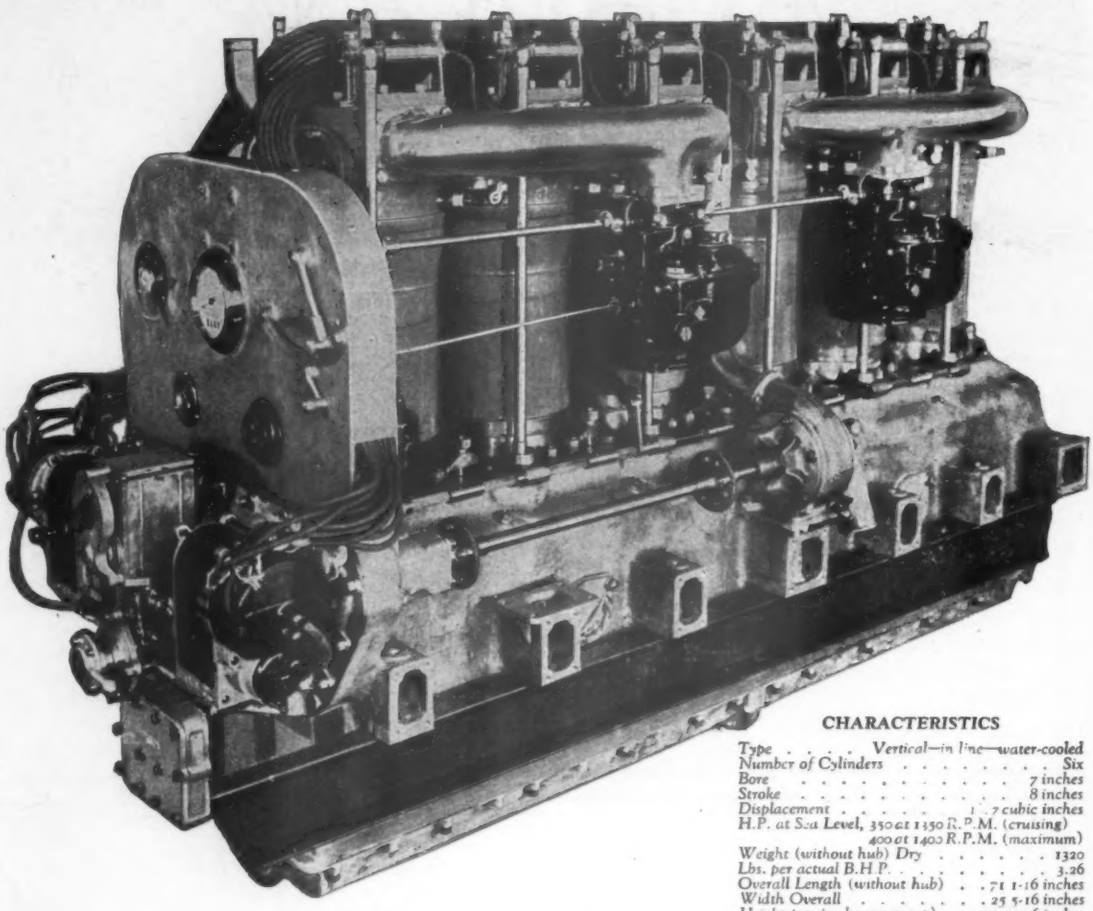
ITHACA, NEW YORK



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Type	Vertical—in line—water-cooled
Number of Cylinders	Six
Bore	7 inches
Stroke	8 inches
Displacement	1,847 cubic inches
H.P. at Sea Level,	350 at 1350 R.P.M. (cruising)
	400 at 1400 R.P.M. (maximum)
Weight (without hub) Dry	1320
Lbs. per actual B.H.P.	3.26
Overall Length (without hub)	71 1-16 inches
Width Overall	25 5-16 inches
Height (engine bearer to top)	31 11-16 inches
Fuel Consumption (lbs. per H.P. Hr.)	.475
Oil Consumption (lbs. per H.P. Hr.)	.008

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The Wright D-1 is a distinctively American engine developed for the propulsion of lighter than air machines, recently completed for the U. S. Navy Department.

This is the largest heavy duty aircraft engine developed to date and is designed particularly for use in ships of the Zeppelin type.

The D-1 marks a very high engineering point of achievement in lighter than air aeronautical propulsion.

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Vol. XIII JULY 17, 1922 No. 3

Flying Across the North Pole

CAPTAIN Amundsen's daring project to fly from Point Barrow, Alaska, over the North Pole to Spitsbergen, involving as it does a non-stop flight of approximately 2000 miles, is worthy of the explorer's ancestors, the Vikings, who crossed the Atlantic in open boats.

The difficulties and hardships which Captain Amundsen and Lieutenants Dahl and Fullerton, the pilots of the JL monoplane which is to make the polar voyage, are likely to experience in the frozen North can hardly be over-estimated. While a few airplanes have been flown north of the arctic circle, in Canada and in Russia, the flights were of short duration. Captain Amundsen's party, on the contrary, will have to keep flying for some twenty-five hours under unparallelled conditions of low temperature and possibly in violent snow storms. Adequate protection of the engine and crew against the terrible cold is of course a *sina qua non* of success under such conditions, but these safeguards will probably present less of a problem than that of insuring a correct compass course over the top of the world. The region in which the flight is planned lies in the vicinity of the magnetic north pole, and the experience of arctic and antartic expeditions shows that in those regions the compass needle is often rendered useless by violent magnetic disturbances which emanate from the magnetic poles.

As the Arctic Ocean does not afford any landmarks, the course of the polar airplane will have to be entirely plotted by compass, sextant and drift indicator—an undertaking which seems gigantic if one considers the low visibility prevailing around the Poles.

The above considerations will give the reader a fair appreciation of the unusual difficulties surrounding Captain Amundsen's proposed flight over the top of the world. The past record of the discoverer of the South Pole shows that he is not afraid to take chances in order to reach an objective, and his latest enterprise will be watched with sympathetic interest by all those who are thrilled by the deeds of brave men.

The New Junkers Monoplane

PROFESSOR Hugo Junkers' latest creation, which is illustrated and summarily described in this issue, will undoubtedly elicit considerable interest from all those interested in the progress of airplane construction.

While the new airplane does not represent any revolutionary development *per se*, it will at once be noticed that it differs fundamentally from previous Junkers monoplanes in that the wings are situated at the top of the fuselage instead of at the bottom. Professor Junkers, who was the originator of what the Germans call a *Tiefdecker* (a "low-wing" machine), thus apparently joins the ranks of those who see the proper solution of the cantilever monoplane in the *Hochdecker* ("high-wing" machine) originated by Anthony Fokker.

Of course, to have built just one airplane of the opposite school of thought need not mean more than that Professor Junkers is experimenting with a design which extended operation has shown very satisfactory. If, on the other hand, the new machine should mark the end of the Junkers *Tiefdecker*, it opens a wide field for interesting speculation.

Aerodynamically the *Tiefdecker* is probably as efficient as the *Hochdecker*, if not more so, for in the former the junction of the wings with the fuselage is much more continuous than in the former, so that the air flows off the machine more easily.

From the practical point of view the advantages of the classic Junkers design are less certain and may be disputed. The closeness of the wings to the ground makes them liable to injury in landings which would cause much less damage to a "high decker". The visibility from the control cockpit is, to a certain extent, less ample, particularly sideways and down. Finally, the integral construction of the wings, or rather of the wing roots, with the fuselage is more complicated, and much less susceptible of production methods, and so is the mounting of the wings.

In this connection it is to be noted that while Professor Junkers original design did not find any imitator in Germany, the Fokker "high wing" design was promptly copied by half a dozen firms. Now that aircraft construction is again authorized in Germany—even though within limits—future products of other German aircraft manufacturers will furnish an interesting indication of the results achieved in their laboratories during the period of forced inactivity.

The Challenge to the World

REAR Admiral Bradley Fiske has challenged the world to a contest in the building of a large commercial seaplane. Associated with him are men whose names carry weight in the scientific world. Such a plan, if it is possible to carry it to a satisfactory conclusion, is a worthy enterprise.

It is to be hoped that the financing of this ambitious project has reached a point where the acceptance of the challenge by foreign groups will not place American aviation in a false light. Issuing challenges of this kind to the world places a heavy responsibility on the men concerned with the project. It would have been fortunate if the plan of underwriting the construction work involved could have been given out at the same time the challenge was issued, for the financial end is really the most important feature of any such undertaking.

So many interesting preliminary plans of ambitious aeronautical enterprises have in the past been given widespread publicity in the press, only to fail of completion from lack of financial backing, that a certain hesitancy is but natural when a new venture of this sort is announced.

Chicago Plans Big Aviation Meet Aug. 4 - 13

Twenty Events with Prizes Totalling $22,475 Announced by Aeronautical Bureau of Chicago

The Aeronautical Bureau, Inc., Suite 1170-1172, Congress Hotel, Chicago, announces that it will hold between Aug. 4 and 13, next, a combined aviation meet, aircraft exhibition and aeronautical congress. The aviation contests are for all types of airplanes and seaplanes, with liberal cash prizes and valuable trophies; the aircraft exhibition will place on show all types of aircraft, aeronautical equipment and accessories; the aeronautical congress will enable representative men of the aviation world to deliver addresses on various phases of aeronautics.

The aviation meet and aircraft exhibition will take place in Grant Park, extending more than a mile along Chicago's lake front and within five minutes of Chicago's business district. The yacht harbor of the Chicago Yacht Club adjoining Grant Park, will afford an excellent landing place for seaplanes.

The Aeronautical Bureau, Inc., is approved by the Chicago Association of Commerce, the Illinois Manufacturers Association, the Chicago Boosters Publicity Club, the Chicago Pageant of Progress Exposition and the Affiliated Clubs of Chicago. Following are the names of the officers of the Aeronautical Bureau, Inc.: Charles S. Rieman, president; Sheldon Clark, first vice president; Col. Frank M. Caldwell, second vice president; D. F. Kelly, treasurer; Philip G. Kemp, secretary; G. A. Shoemaker, corresponding secretary; W. A. Dudley, director of publicity.

The Committees

The Executive Committee is composed as follows: Gen. LeRoy T. Steward, chairman; E. E. Gore, John M. Glenn, D. F. Kelly, Col. R. W. Stewart, Everett C. Brown, A. H. Smith, George B. Foster, Sheldon Clark, William P. MacCracken, jr., Charles M. Hayes, Charles S. Rieman.

The General Committee, headed by the Hon. William H. Thompson, Mayor of Chicago, is composed of the following: W. Rufus Abbott, Pres. Illinois Bell Telephone Co.; Royal N. Allen, Sec'y Affiliated Clubs of Chicago; E. M. Barber, Ass't Director, Air Mail Service, Eastern Division; Maj. Gen. George A. Bell, Jr., Commander 6th Corps Area, U. S. Army; Maj. Alfred J. Benson, Pres. Army and Navy Club; M. L. Bromberg, Pres. Chicago Trunk and Leather Goods Co.; Everett C. Brown, Pres. National Live Stock Exchange; Frederick L. Brown, Pres. Crandall-Brown Lumber Co.; John Burke, General Manager, Congress Hotel; E. J. Bush, Gen'l Sales Mgr., Diamond T Motor Car Co.; H. M. Byllesby, Pres. H. M. Byllesby Co.; Sheldon Clark, Vice Pres. Sinclair Refining Co.; Frank J. Conrad, Stanwood Co.; J. F. Cornelius, Vice Pres. H. O. Stone & Co.; Ralph C. Diggins, Pres. Ralph C. Diggins Co.; Tracy Drake, Pres. Drake Hotel Co.; George B. Dryden, Pres. Chicago Athletic Ass'n.; Capt. John C. Evers, U. S. Navy; George B. Foster, Ass't to Vice Pres. Commonwealth Edison Co.; John M. Glenn, Sec'y Illinois Manufacturers Ass'n.; E. E. Gore, Pres. Chicago Association of Commerce; Charles M. Hayes, Pres. Chicago Motor Club; H. H. Haylett, Mgr. Outlying Districts Organization, Pageant of Progress; Herman H. Hettler, Pres. Herman H. Hettler Lumber Co.; Charles F. Henry, Pres. Highlands Hotel Co.; J. E. Hitt, Pres. Illinois Athletic Club; Wirt E. Humphrey, Pres. Hamilton Club; D. F. Kelly, General Manager, Mandel Brothers; E. J. Lehman, Pres., The Fair; James Levy, Pres. James Levy Automobile Co.; E. R. Litsinger, Vice Pres. West Side National Bank; William P. MacCracken, Jr., Chairman, Committee on Law of Aviation American Bar Ass'n.; Maj. W. C. McChord, Air Officer, 6th Corps Area, U. S. Army; W. Frank McClure, Director of Publicity, Amer. Bond & Mtge. Co.; Charles A. Stevens, Charles A. Stevens & Bros.; John R. Thompson, Pres. John R. Thompson Co.; William H. Mitchell, Mitchell, Hutchins & Co.; John W. O'Leary, Vice Pres. Chicago Title & Trust Co.; Col. William Nelson Pelouze, Pres. Pelouze Mfg. Co.; John T. Pirie, Carson, Pirie, Scott & Co.; Earle H. Reynolds, Pres. Peoples Trust & Savings Bank; Charles S. Rieman, Pres. Elgin Motor Car Corp.; John Dill Robertson, Pres. Pageant of Progress Exposition; Roderick Ross, Ross Printing Co.; C. E. Russell, Pres. Russell Electric Co.; A. H. Smith, Vice Pres. Madison-Kedzie State Bank; John Smulski, Pres. Northwestern Trust & Savings Bank; Charles A. Stevens, Charles A. Stevens & Bros.; Gen. LeRoy T. Steward, Post Office Superintendent of Delivery; Col. R. W. Stewart, Chm., Bd. of Directors, Standard Oil Co. (Ind.); Frank B. Stone, Pres. South Shore Country Club; John R. Thompson, Pres. John R. Thompson Co.; Charles H. Wacker, Pres. Chicago Plan Commission; John C. Wahl, Vice Pres. Eversharp Pencil Co.; Philip K. Wrigley, Vice Pres. William Wrigley Co.

Following are the committee chairmen of the Chicago aviation meet: Contest, Maj. W. C. McChord, U. S. Army; Exhibition, M. L. Bromberg; Congress, W. P. MacCracken, Jr.; Landing Fields, Ralph C. Diggins; Legal, W. P. MacCracken, Jr.; Entertainment, J. F. Cornelius; Finance, D. F. Kelly; Advertising, W. Frank McClure.

General Regulations

1. The Contest Committee reserves the right to call off any event if there are not more than three entries for such event. In case an event is called off, those contestants who have entered will be notified on the closing of the entries and their entry fee returned to them.

2. The ratings given various aeronautical motors by the United States Government will be accepted as final, so far as horsepower of any motors in planes contesting for any event where the horsepower of the motor is a factor involved.

3. In those events where contestants fly from a distant point to Chicago, they will be furnished with their plane number, and a certificate to be signed at the point of departure by two officials of a recognized Aero Club or two City officials.

4. The Air line distance from the point of departure to Chicago will be considered as the number of miles flown in all events where the distance is a factor.

5. Applications for entry, accompanied by check for the proper fee, must be in the hands of the Contest Committee by noon, July 31, with the exception of those events where this regulation is expressly waived.

6. All successful contestants in events 8-9-10 and 13 will be entered in event 15. Any successful contestant in the above mentioned events failing to participate in event 15 will forfeit $100.00 of prize money previously won.

7. All contestants of this meet will report immediately upon arrival to the Official in Charge of Flying, who will have charge of the flying during the meet, and whose decisions will be final. The Official in Charge of Flying will furnish all contestants with copies of rules and regulations governing the contests, which must be strictly adhered to.

8. No contestant or participant of any event held under the auspices of this Bureau will be permitted to indulge in "stunt" flying within the city limits of Chicago during the period of this meet, under penalty of being barred from participating in future events. All entrance fees and $100.00 prize money of each winner will be held until last day of the meet as forfeit to prevent winners, or contestants from "stunting." It is not the idea of this meet to make a spectacular exhibition but to prove to the public the practicability of Commercial Aviation.

9. The Committee reserves the right to inspect all planes, and prohibit any plane from flying which, in its opinion, would be unsafe.

10. All contestants will notify the Chicago Aeronautical Bureau by wire the probable date and time of arrival.

11. All entry fees will be returned upon last day of meet, provided contestants have complied with all rules and regulations and have participated in at least one of the events for which entered.

12. No protest will be considered unless made in writing and delivered to the Official in Charge of Flying within 24 hours after finish of the event over which protest is made.

Contests

EVENT NUMBER 1

Entrance Fee $15.00—Passenger Miles Flown to Chicago

Contestants in this event will be furnished with a certificate to be signed as to time and date of departure, with the names of passengers. Such certificate to be signed by two Aero Club or City officials at point of departure. Bona fide accommodations for adult passengers claimed must be provided in contesting plane. Open to all classes of passenger carrying planes. Contestants in this event must arrive by 6.00 p. m. Sunday, Aug. 6, number of passengers, exclusive of pilot, time, miles flown, to govern awards. Prizes: First, $625.00; Second, $375.00; Third, $250.00. Total, $1250.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 2

Entrance Fee $15.00—Airplane Passenger Carrying Performance Test to Chicago

Contestants in this event will be furnished with a certificate to be signed as to time and date of departure, with the names of passengers. Such certificate to be signed by two Aero Club or City officials at point of departure. Bona fide accommodations for adult passengers claimed must be provided in contesting plane. Contestants in this event must arrive by 6 p. m., Sunday, Aug. 6. Prizes to be awarded the planes winning the highest factor based on the following formula: number of passengers, time, miles flown, divided by the flying time times the horsepower of the motor. Prizes: First, $625.00; Second, $375.00; Third, $250.00. Total, $1250.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 3

Entrance Fee $15.00—Freight Carrying Efficiency Contest from a Distance to Chicago.

Contestants in this event will be furnished with a certificate to be signed as to the time and date of departure with weight of freight certified to. Such certificate to be signed by two Aero Club or City officials at point of departure. Contestants in this event must arrive by 6.00 p. m., Sunday, Aug. 6. Prizes to be awarded the planes making the highest factor based on the following formula: Number of cwt. or decimal fraction thereof of commercial freight times miles flown, divided by the flying time times the horsepower of the motor. Prizes: First, $625.00; Second, $375.00; Third, $250.00. Total, $1250.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 4

Entrance Fee $15.00—Passenger Miles Flown by Hydro-Airplane to Chicago

Contestants in this event will be furnished with a certificate to be signed as to time and date of departure, with the names of passengers. Such certificate to be signed by two Aero Club or City officials at point of departure. Bona fide accommodations for adult passengers claimed must be provided in contesting plane. Open to all classes of hydro-airplanes, passenger carrying planes. Contestants in this event must arrive by 6.00 p. m., Sunday, Aug. 6. Number of passengers, exclusive of pilot, times miles flown, to govern award. Prizes: First, $300.00; Second, $200.00; Third, $100.00. Total, $600.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 5

Entrance Fee $15.00—Passenger Carrying Race from Chicago to Peoria and Return

Planes will leave the field at Chicago flying to the authorized landing field in Peoria, where they will be required to stop a minimum of thirty minutes for oil, gas or any necessary mechanical adjustments, then return to Chicago. All contestants must carry one or more passengers. Prizes: First, $500.00; Second, $300.00; Third, $200.00. Total, $1000.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 6

Entrance Fee $15.00—Contest for Passenger Planes or Hydro-Airplanes De Luxe Cabin Type

Prizes to be awarded on points computed as follows: Convenience and comfort of pilots and passengers, with completeness of appointments in the opinion of the judges, 25 points; Number of passengers, excepting pilot, each, 5 points; Speed to be determined in race over a measured course of approximately 80 miles, 25 points; Cruising radius to be determined by a computation of the consumption of fuel in the race over measured course, as described above, 50 points; Low landing speed and short take-off, to be determined by actual distance covered after touching ground on landing and amount of ground covered in taking off, 10 points; General characteristics covering visibility of pilot and factor of safety, in the opinion of the judges, 10 points. Hydro-airplanes entering this event will fly over a triangular course on Lake Michigan of approximately 80 miles. Prizes: First, $1000.00; Second, $750.00; Third, $250.00; Total, $2000.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 7

Entrance Fee $15.00—Aerial Photo Purchase Prize

Photographs must be finished and submitted by 12 noon, Aug. 10. Photograph to be made of the Lake front from the North limits of the City of Chicago to the South Shore Country Club. The photograph to cover not less than one mile inland from the lake. Finished photograph should not be under 5 ft. x 18 in., or exceed 10 ft. x 3 ft. in size. Negatives of all photographs taken in this contest to be the property of the Chicago Aeronautical Bureau. Prizes: First, $1500.00; Second, $500.00; Third, $300.00; Fourth, $200.00; Fifth, $100.00. Total, $2600.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 8

Entrance Fee $15.00—Class "C" Races

These races to be held over a period of two days. Open only to Curtiss JN4D's, "Canucks," and Standards with OX5 motors. Races to be flown over a measured course of approximately 80 miles. Total races to cover two days. All contestants will be assigned a date they will fly, according to order in which applications for entrance are received. Each day there will be three prizes awarded as follows: First, $300.00; Second, $200.00; Third, $100.00. Total, $600.00, one day; $1200.00, two days. In addition to this the six prize winners will compete the following day over the same course, for prize money as follows: Prizes: First, $600.00; Second, $400.00; Third, $200.00. Total, $1200.00. Total for entire race, $2400.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 9

Entrance Fee $15.00—Class "B" Races

Open to all planes with a rated speed of 100 m.p.h. or less. Races to be flown over measured course of approximately 80 miles. In the event any contesting plane averages a speed of 100 miles or more per hour, such plane will be disqualified from receiving prize money. Prizes: First, $750.00; Second, $400.00; Third, $200.00. Total, $1350.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 10

Entrance Fee $15.00—Class "A" Races

Open to planes with a rated speed of 125 m.p.h. or less, distance 160 miles, race to be flown twice over a measured course of approximately 80 miles. The right is reserved to cancel this event unless there are five or more starters. In the event that any contesting plane averages a speed of 125 miles or more per hour, such plane will be disqualified from receiving prize money. Prizes: First, $1000.00; Second, $600.00; Third, $400.00. Total, $2000.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 11

Entrance Fee $15.00—Hydro-Airplane Race, Free-for-All

Planes to leave harbor of Chicago Yacht Club and fly to harbor of Milwaukee Yacht Club, Milwaukee, Wis., where they will be required to stop a minimum of thirty minutes for oil, gas or any necessary mechanical adjustments, then return to Chicago. All contestants must carry one or more passengers. Prizes: First, $600.00; Second, $400.00; Third, $200.00. Total, $1200.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 12

Entrance Fee $15.00—Endurance Contest

Prizes will be awarded planes making longest sustained flight after original take-off. No allowance made for forced landings. Prizes: First, $600.00; Second, $400.00; Third, $200.00. Total, $1200.00. In addition to the cash prize a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 13

Entrance Fee $15.00—Races for Chicago Owned Airplanes

Races to be run over a measured course of approximately 80 miles. Open only to planes actually owned by Chicagoans at time of entry. Entries for this race will be closed July 15. Prizes: First, $300.00; Second, $200.00; Third, $100.00. Total, $600.00. In addition to the cash prize a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 14

Entrance Fee $25.00—Best Formation of Five Planes

Passing in review at altitude of 1000 ft. going both North and South over the landing field holding the formation intact on both turns and returning to land. Formation may be formed at an altitude of over 500 ft. and must be broken at 1000 ft. after completion of flight both ways of field. Entries for this event to be closed Aug. 10. Prizes: First, $500.00; Second, $300.00; Third, $200.00. Total, $1000.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 15

No Entrance Fee. Handicap Race for Planes Winning Previous Events

Handicap race for planes winning previous events, as per paragraph 6 of General Regulations. Handicap to be computed from actual time made by planes winning previous events. Prizes: First, $600.00; Second, $400.00; Third, $200.00. Total, $1200.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 16

No Entrance Fee—Consolation Race

Entrants must declare themselves for this race 24 hr. before scheduled time for race. Entrants to qualify must have contested in some previous event and failed to place. All planes in this contest will be handicapped on basis of time made in previous contests in which they participated during this meet. Prizes: First, $500.00; Second, $400.00; Third, $300.00; Fourth, $200.00; Fifth, $100.00. Total, $1500.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 17

Entrance Fee $15.00—Non-Professional Race

Race to be run over measured course of approximately 80 miles. Planes to be flown in race by bona fide owner, unaccompanied by mechanic or passenger. Valuable trophy in the form of a cup will be awarded to the winning plane, emblematic of the Amateur Championship of America. Prizes: Second prize, Cup; Third prize, Cup.

EVENT NUMBER 18

Entrance Fee $25.00—Largest Formation of Planes Owned by Clubs Excepting Chicago Organizations, to be Flown Daily

Prize to be awarded on points computed at one point for each plane for each day for seven days. Cash prize of $500.00 and Chicago Aeronautical Bureau Cup valued at $250.00.

EVENT NUMBER 19

Entrance Fee $15.00—Accuracy Contest

Landing with a dead stick for mark, cutting motor of 500 ft. The time of this contest to be announced during the meet. Prizes: First, $300.00; Second, $200.00; Third, $100.00. Total, $600.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

EVENT NUMBER 20

Entrance Fee $15.00—Altitude Test

Contestant will take-off with one passenger, who will be assigned to his ship by the Contest Committee. Plane will be equipped with an altimeter and a thermometer. Plane contesting must reach highest possible altitude and land within one hour's time after original take-off. Passenger to keep a record of altitude and temperature at highest altitude obtained. Prizes: First, $300.00; second, $200.00; Third, $100.00. Total, $600.00. In addition to the cash prizes a valuable trophy in the form of a cup will be awarded to the winner of this event.

In addition to the events scheduled above the contest committee now has under consideration another contest which will be open to all planes qualifying with a speed of 140 miles or more per hour.

A very interesting added feature will be the annual contest of the National Model Airplane Association. In these contests miniature airplanes of various design will compete for valuable trophies. Full particulars covering these model airplane contests will be furnished upon request.

Standard Atmosphere

N.A.C.A. Report No. 147

Report No. 147 of the National Advisory Committee for Aeronautics, by Willis Ray Gregg, discusses the need of a standard set of values of pressure, temperature and density at various altitudes and points out the desirability of adopting such values as are most in accord with actual average conditions, in order that corrections in individual cases may be as small as possible. To meet this need, so far as the United States is concerned, all free-air observations obtained by means of kites and balloons at several stations in this country near latitude 40°N have been used, and average values of pressure, temperature and density, based upon those observations, have been determined for summer, winter and the year and for all altitudes up to 20,000 m. (65,000 ft.). These values are presented in tables and graphs in both metric and English units; and in the tables of densities there are also included values of density for other parts of the world,—more particularly for Europe. A comparison with these values shows that, except in the lowest levels, the agreement is very satisfactory. A further comparison with values of density determined from Toussaint's law of temperature decrease, $t = 15 - .0065z$, in which t is the temperature in deg. C., and z the altitude in meters, indicates very good agreement with those values up to 10 Km. It is therefore recommended that the United States adopt Toussaint's values of density up to 10 Km. and the values presented in the tables for all higher altitudes.

President Harding Commends Aero C. of C.

Chief Executive Predicts Amazing Development of Aerial Transport -- Sees Need of Public Interest and Support

THE WHITE HOUSE
WASHINGTON

June 23, 1922.

Gentlemen:

I find pleasure in adding a word expressive of my interest in aerial transport, and in the presentation of the subject which is being made by the Aeronautical Chamber of Commerce. The history of civilization is largely the history of communication. Each stage of progress seems to demand and develop improved means of transport. The steamship, the railroad and the motor car have been devised and utilized. Now we enter a new phase. It is a real distinction to America, to be known as the birthplace of the airplane; it should be our concern that this art shall not languish, but that in its practical application we shall lead the world. The amazing development will take place in the near future in the utilization of the air as a medium of transport and communication. As a government, we are aiming to provide this art with necessary guaranties of law, and with such facilities as may be possible through the encouragement of airways and terminals. But for air transport quickly to achieve the important place it is destined to occupy, it must have public interest and support. I hope your efforts in this behalf may be productive of most gratifying results.

Very truly yours,

Warren G. Harding

Aeronautical Chamber of Commerce of America, Inc.,
501 Fifth Avenue,
New York City, N. Y.

The letter reproduced above was received by the Aeronautical Chamber of Commerce of America from President Harding. Prophesying for the near future an amazing development in air travel, both transportation and communication, the Chief Executive expresses the belief that each stage of progress demands improved means of transport, and he wishes the United States to lead the world in commercial aviation.

The President's reference to future development indicates the interest with which the government is watching the evolution of the flying machine from the awkward kite like affair of fifteen years ago to the well finished product of today, which begins to take its place among the accepted means of rapid transport.

The Aeronautical Chamber of Commerce of America, which is the clearest expression of the development of the American aircraft industry, was organized the first of this year to "foster, advance, promulgate and promote aeronautics, and generally do every act and thing which may be necessary and proper for the advancement of American aviation." Starting with Orville Wright and Glenn H. Curtiss, the pioneers, and several other leading aircraft designers and builders, the Chamber now includes nearly two hundred members located in every state of the Union. These members are among the most representative in aeronautical engineering and operation.

As an indication of the present state of American aeronautics, the Aeronautical Chamber of Commerce estimates that there are today about 1200 civilian owned and operated aircraft in the United States, while some 500 civilians are undergoing flying training at civilian aviation fields this summer.

The average charge per passenger a year and a half ago was 65 cents a mile. Last year it was 55 cents; and it is believed that the average this year will be about 50 cents. There has been slight increase in terminal facilities so far this year. The Administration is encouraging local landing fields and national airways wherever practical, and it is hoped that before long Congress will pass the proposed legislation which, as the President indicates, is generally conceded to be necessary to the proper development of American aviation.

The Handasyde H2 Commercial Monoplane

Airplane Built for Australian Airways Follows Original Ideas in Construction

In the Feb. 6, 1922, issue of AVIATION brief mention was made of the general characteristics of the commercial airplane the Handasyde Aircraft Co. of England was building for an Australian airway service. We are now indebted to *The Aeroplane* for the following particulars regarding the construction of this machine.

The Handasyde Type H2, as this monoplane is designated, will be equipped with 350 hp. Eagle 9 type Rolls-Royce engine. The machine is designed for the carriage of five or six passengers and an additional load of mails, making a total commercial load of 1200-1500 lb. The top speed is guaranteed to be 115 m.p.h., but it is expected that the speed actually realized will be considerably greater. The total loaded weight will be about 5000 lb. The designer prefers not to publish any details of dimensions and weights, or to claim definite performances, until the machine has actually been tested.

The Handasyde H2 monoplane is to a very large extent a purely timber structure, which embodies some novel features. Very little metal work is used, and the few metal fittings are of a simple and robust character.

The Fuselage

The fuselage is of the braced longeron and strut type, the bracing being performed by plywood skin, as shown in Fig. 4, while the "struts" are in the form of hoops, which also act as formers.

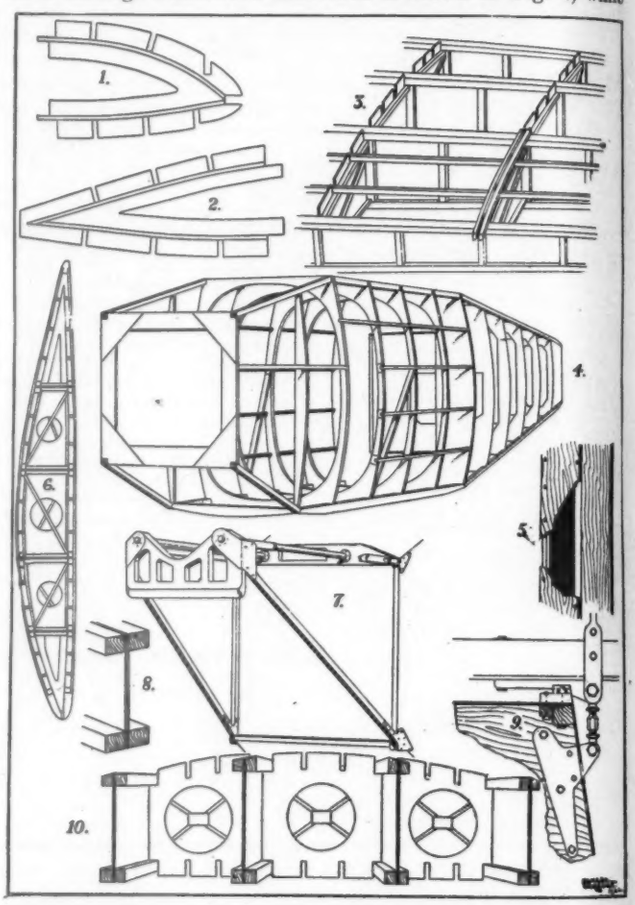
This fuselage is built in two parts, the forward one an engine-carrying nose (Fig. 7), and the after part, which contains cabin, etc., and carries the tail. The main fuselage body is built on four longerons—each one of which is in three straight lengths. The forward length, of spruce, covers the space occupied by the pilots cockpit. Over this space the longerons diverge rapidly in side elevation from front to rear. There follows a second straight length, corresponding to the passenger cabin, which is also of spruce. Over this space the four longerons are parallel. From the rear of the cabin to the tail the longerons are of ash. The top longerons over this section slope down very slightly toward the tail, the lower longerons sweep up very considerably. Joints between these longeron sections are of the simple fishplate type, and are covered by the three-ply skin—so that the main body of the fuselage is not a dismountable structure.

The front frame of the forward section consists of four spruce members, with three-ply cornerpieces. There is an intermediate set of four spruce struts and thereafter follows the hoop structure of the cabin.

The hoops which are in effect the fuselage struts in this cabin portion are of box section. The inner member of each box is a bent hoop made of ash in two plies. The outer members are of spruce, and the sides of the box are formed by three-ply. The whole structures are glued and screwed together (Fig. 5). The after hoop at the cabin end has the three-ply sides of the box extended inward, and a door-frame worked into the structure, thus partitioning the cabin from a mail compartment which is immediately aft of it.

Aft of the cabin, the struts are built up of spruce only, but are in general of the same type of shape as the cabin hoops. The first beyond the cabin is three-ply covered to form the bulkhead of the cargo space, but is fitted with a sliding door so that one may crawl into the after part of the fuselage for inspection. At the rear end of the body there is another solid bulkhead just forward of the front spar of the tail plane.

Over and above the four main longerons there are numerous stringers of spruce from the front of the cabin to the tail. In the cabin length these stringers are continuous except for the necessary stoppage at the door, which is arranged between the first two of the cabin frames. They are let into the outer spruce members of the hoops. Over the after part these stringers are stopped at each frame, and serve only to support the outer skin. The skin of three-ply is screwed to all frames, longerons, and stringers. Joints in the three-ply are made by butting the two sheets, applying a "fishplate" of three-ply about 4 in. wide on the inside only, and riveting through from skin to "fishplate" with hollow rivets of about 3/15 dia. pitched about 3 in. apart. The general appearance of a fuselage framework uncovered is shown in Fig. 4, while



Some constructional details of the 350 hp. Rolls-Royce engined Handasyde passenger and mail airplane

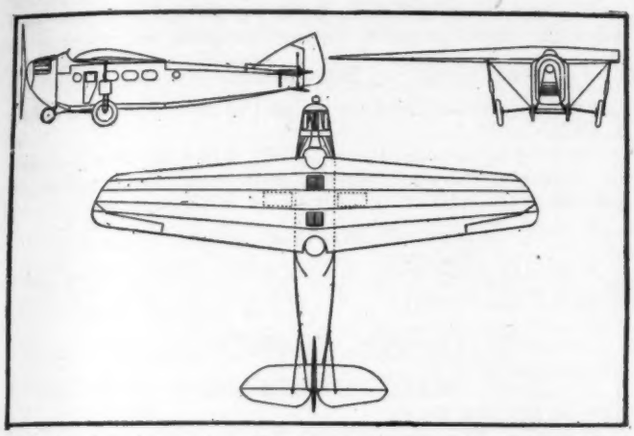
Fig. 7 shows the engine-carrying nose which is attached to the main body. This nose consists of two ash members on each side, which meet at a forward cross member of five-ply spruce. The engine bearer tubes run from the front cross member to the upper cross member of the bulkhead in front of the pilot. This nose does not form a detachable engine mounting, because the after support for the engine bearer is part of the main fuselage structure. The nose is, however, removable after taking out engine and bearers, and this appreciably simplifies packing up the machine for transport.

Wing Structure

The structure of the wings is the most interesting part of this machine. The machine is of the cantilever monoplane type, with the wing entirely above the fuselage. The whole conception of these wings is unusual. They are of the multispar type, with a wooden covering, and apart from the

joints between the wings and the body, the two halves of the wings, and the aileron hinges and control mechanism the only metal parts employed are screws.

The wings are heavily tapered, both on plan and in section, from root to tip. The leading edge sweeps back slightly, the trailing-edge very pronouncedly. The section is an unusual one. The top surface is of the usual type, with its maximum camber in the region of one-third the chord from the leading edge. The lower surface is practically flat over the spars, but slopes down sharply from the leading edge to the front spar,



Outline drawings of the Handasyde commercial airplane which will be used on the Australian airways

and somewhat less sharply up from the rear spar to the trailing edge (Fig. 6.) The section therefore is biconvex. The four spars (see Fig. 10), which are spaced at approximately equal intervals across the chord, are all of the H section built up, with top and bottom flanges of spruce in two halves, and a web of spruce two-ply, which web is covered with glued-on fabric. The flanges are glued and screwed to the webs (Fig. 8).

The ribs are formed of three-ply built in sections which fit into the recesses in the spars. They are stiffened with spruce members glued and screwed to them, roughly parallel to the wing surfaces, but considerably inside those surfaces. The outer edges of these rib webs are notched between spars, the through-going spruce longerons are run through the notches (Figs. 1-2). There are two of these stringers between each spar, as shown in Fig. 3. Over the stringers is applied a set of continuous spruce laths, which form the rib flanges proper. These are screwed to each spar and stringer. The covering consists of strips of spruce, corrugated internally, which are laid on parallel to and flush with the rib flanges, and are also screwed to each stringer and spar. This spruce skin serves the purpose of drag bracing, and also as the top and bottom flanges of the composite girder formed by the whole structure. The leading edge and the trailing edge are formed by three-ply formers similar to those between spars, which are supported by the through rib flanges. These are also provided with longitudinal stringers running right through. The leading edge proper is formed of three-ply bent to trough section, screwed to the leading stringers, which are of extra heavy section. The trailing edge is of solid spruce.

The wings are built in two sections which join on the center line of the machine. Owing to the fact that except in the case of the front spar, all spars meet at an angle, it has required some ingenuity to obtain a simple form of joint. Fig. 9 shows how the difficulty has been overcome.

The wings rest on the top rail of the fuselage over the cabin. An aluminum block is fitted beneath each spar, and this block carries at its outer end a downward projection which registers on the outside of a mating block of the same material on the longeron. This block on the longeron is fitted with two upwardly projecting tongues, one of which registers on each side of the block on the spars. Therefore when each set of these blocks is properly engaged, the wing is accurately located both laterally and longitudinally in reference to the fuselage.

The lift load from the spar is taken to the main fuselage structure through one right and left-hand screw adjuster, generally of the nature of the ordinary wire strainer, which is coupled at the top to a strap surrounding the spar and at its bottom to a lug attached to one of the main fuselage frames.

From this description and from the sketches it will be realized that this machine has many features of great novelty and interest. The type of construction is necessarily somewhat expensive at the outset, but as soon as the necessary jigs are set up repetition should be extremely cheap. The absence of complicated metal fittings allows the machine to be built by any competent staff of woodworkers, and if in fact the type proves to be free from trouble due to warping of the timber, it may prove to be a serious rival to metal structures in the future.

New List of Landing Fields

Issued by Hydrographic Office, U. S. Navy

The following new data on landing fields previously reported have been received from the office of the Chief of Air Service, Washington, D. C.

Alabama

Montgomery—On inactive status, in charge of caretaker. To be used as airway station and for National Guard and Reserves.

Ozark—Carroll Field; operated by 39th Division, Tank Company. Good at all times.

Connecticut

Hartford—Municipal L-shaped field, 96 acres, located at South Meadows along the west bank of the Connecticut River, 1½ miles south of large stone bridge.

New London—Shinnecossett Golf Grounds; splendid field, available at all times. Notify Hotel Griswold of coming. Situated on shore of Long Island Sound, oval 1½ miles.

Florida

Labelle—Cattle range, open prairie, 2,000 ft. square, grass covered and well drained, located 1¾ miles north of town.

Orlando—Orlando Aviation Field; L-shaped, one-half by one-fourth mile, flat, sandy, never muddy. Hangar for two ships, located 2½ miles from town.

Palmdale—Ten miles from Lake Okeechobee, 160 acres, airdrome under construction,

Georgia

Augusta—Irregular field near Savannah River. Site of Old Camp Hancock; all types of planes have been flown from this field; good at all times; large brick hospital good land mark.

Savannah—(*a*) Commercial landing field, 1,000 by 500 ft., very smooth hard sod; field at north edge of city; playgrounds and park surround field; golf course 200 yd. north. (*b*) Municipal field 2,500 by 500 ft.; one of the best fields in the country for both construction and location. Chamber of commerce and police department will offer every assistance; on edge of city.

Illinois

Bloomington—Forman Field; 60 acres, square, level, well drained; one-quarter mile from town on paved road; 50 miles west of Richmond.

Casey—Open field on outskirts of town, 40 acres on paved road; good field.

Effingham—Austin Field; one-quarter section, square; good for all types of planes.

Forrest Park—Forty acres, square; used by Air Mail; United States Government and municipality; four hangars, all accommodations; 12 miles from Chicago.

Kankakee—State Hospital Grounds; good field with supplies available.

Monmouth—Commercial; operated by the Curtiss Iowa Aircraft Corp.; L-shaped, 2,145 by 495 ft., smooth, high and dry; can land at all times; on macadam road one-half mile north of city; hangars and supplies.

Monticello—Golf grounds, about 60 acres; borders hard road and river.

Pana—Smooth, level, blue grass sod, 50 acres; three-fourths mile east of city limits.

Shelbyville—Forcythe Field; black soil, not affected by rain; field 900 by 430 ft.

Watseka—Three fields in this vicinity; any sized plane can land at any time.

Indiana

Mt. Vernon—Hageman Field; one-fourth by one-half mile, good drainage, excellent condition.

Newcastle—One-half mile race track, always in good condition.

Washington—Stillwell Field; 1,320 ft. square; clay soil, soft after rain; borders on State highway; land east and west.

Kentucky

Lexington—Halley Field; 900 by 1200 ft., an old Frankfort Pike, 2 miles from city.

Maine

Old Orchard—Beach available for landing 2 hr. before and 2 hr. after high tide; 10 miles long, white sand; hangar and supplies; operated by Old Orchard Beach Flying School.

Maryland

College Park—Air Mail Field, 3,200 by 1,200 ft. Hangars and supplies; all accommodations.

Baltimore—Field large and well cared for; has five large hangars and repair shop; large and comfortable club house; one of the best and most completely equipped airdromes.

Massachusetts

Framingham—State Muster Field; 2,000 by 1,200 ft.; level, rather rough; only suitable landing field in this vicinity.

New Bedford—Fort Rodman Drill Grounds; hard surface, in excellent condition, 1,230 by 900 ft.; no obstacles but a few low trees in southwest.

Orange—Field 300 by 1,200 ft.; borders Boston & Maine Railroad and Millers River on the north and highway on the south; high tension wires along highway.

Taunton—King Flying Field; 2,000 by 1,500 ft.; 4 miles east of town near small river; hangar and supplies.

West Springfield—Sixty acres between river and highway; good condition.

Michigan

Chelsea—Emergency Field, used frequently, sodded, 1,650 by 660 ft.; 14 miles east of Ann Harbor on cement highway.

Dowagiac—Forty acres, operated by the Heddon Aviation Co.; 1,320 ft. square, sandy soil, suitable for landing at all times.

Midland—Three hundred and twenty acres; always available.

Mt. Clemens—Selfridge Field; on inactive status in charge of caretaker; to be used as airway station and for National Guard and Reserves.

Roseville—Operated by the Packard Motor Co., one-half mile square, well drained, sodded, white board fence around field.

Mississippi

Belzoni—Flat sandy loam, 400 by 500 ft.; one-half mile from town.

Grenada—Field 75 acres, level sodded meadow; borders State highway; 2½ miles from town.

North Carrollton—Field 50 acres, crossed by highway and railroad at right angles.

West Point—Payne Field; one-half mile square, used by municipality.

New Hampshire

Concord—State Camp Ground; available at all times except two weeks during annual encampment; 1000 by 2000 ft.; all accommodations.

Hanover—Currier Estate; 1,100 by 600 ft., hard pan, good drainage; near Dartmouth College; supplies, etc.

New Jersey

Newark—Hellar Field; to be used as golf course after July 1, 1922.

Paterson—Pompton Plains Field; 2,500 by 900 ft.; used by passenger-carrying planes; good condition; borders on pike and railroad.

New York

Hammondsport—Field 1 mile from town, west of Lake Keuka, 1,450 by 150 ft.; flat and smooth; hangar, supplies, etc.

Port Jervis—Emergency, available when in grass; 1½ miles northeast of town.

Schenectady—Municipal 1,800 by 1,360 ft., 1 mile west of city, in Mohawk Valley.

Waterloo—Two emergency fields on edge of town. Used on occasions.

North Carolina

Columbia—Good landing in school grounds and excellent landing for seaplanes in Bull Bay, 3 miles from town. No tide; no beach; little current.

Wilmington—Audubon Field; municipal, 1,600 by 1,200 ft.; excellent condition.

Ohio

Akron—Wingfoot Field and Wright Field; two commercial fields in good condition.

Cambridge—Good field, 650 ft. square, excellent drainage; on national highway.

Toledo—Municipal, tile-drained; Bay View Park, N.E. edge of city.

Pennsylvania

Bellefonte—Air Mail Field; excellent condition at all times.

Dubois—Municipal, 500 ft. square, near baseball grounds.

Everett—Twenty-acre field; slate soil; well drained; 2 miles east of mountains.

Lebanon—Wheat field, can be used in emergency, abandoned canal along southern edge of field.

Meyersdale—Municipal; used as fair grounds; always available.

Penllyn—Polo Field; 900 by 300 ft., good condition; available at any time.

Rhode Island

Hillsgrove—Race track, 1,800 by 1,500 ft.; good condition; always available.

South Carolina

Columbia—Emerson Field; municipal, 1,500 ft. square; used by the Government during the war; excellent field with hangars, 5 miles southeast of town.

Tennessee

Tiptonville—Field 1,287 by 2,172 ft., 1 mile southeast of town, one-half mile from Reel Foot Lake; excellent field, soft after heavy rains.

Virginia

Culpeper—Field of 100 acres, pasture, 1 mile from town; good condition.

Fort Royal—Two fields near town available at all times. Near Allegheny foothills.

Newport News—Municipal, operated by Atlantic Coast Aeronautical Co.

Staunton—Lyle Field; municipal, 650 by 400 ft.; on northern outskirts.

Williamsburg—Municipal, operated by the Curtiss School of Aviation.

Wisconsin

Madison—Weber Field; municipality arranges for each arrival; 80 acres, square.

Muscoda—Field 1,000 by 2,000 ft.; always available; sodded; good drainage.

Rhinelander—Municipal, 1,045 by 452 ft.; sodded; good drainage, always available.

Spring Green—Municipal, used for public park and fair grounds.

—*N.A. 5, 1922*

The Story of an Unairworthy Airplane

Capt. E. V. Rickenbacker, Eddie Stinson, pilot, Steve Hannagan, writer, and Theodore Lovington, mechanic, left Mitchel Field, Garden City, L. I., N. Y. on June 7, in a JL6 monoplane acquired from the Air Mail Service. They intended making a three months round-the-country trip to obtain an industrial survey and incidentally to enable Captain Rickenbacker to visit his motor car sales organizations in various cities.

The aerial travelers started out over the transcontinental airway system of the Air Mail Service by way of Cleveland and Chicago to Omaha. They experienced much mechanical trouble en route, chiefly with the engine accessories, and finally the machine was wrecked when it was taking off at Omaha, on June 10, bound for Denver, Colo. Captain Rickenbacker then gave up his plan of a round-the-country tour by airplane.

How Underwriters' Laboratories Sees It

In connection with this trip and the incidents which accompanied it, AVIATION is in receipt of a communication from Underwriters' Laboratories which contains interesting information regarding the airworthiness of the particular airplane in question. This communication says in part:

"Upon Captain Rickenbacker's request, Aviation Engineer Maj. R. W. Schroeder visited Detroit on May 28 and 29 for preliminary inspection of the JL6 all-metal monoplane proposed for use in this projected tour. It was found that the machine in question was one of four abandoned by the Air Mail Service which have been in open storage since the summer of 1921. It was further found that the engine of the particular machine in question including all engine accessories gave substantial evidence of lack of attention and care. The general appearance of the machine was not such as to permit the belief that it had been properly maintained throughout in the usual manner or care, particularly for the severe service contemplated.

"During Major Schroeder's visit to Detroit, the machine suffered minor injuries from two landings due to defective landing gear. A forced landing had been made in the flight from Chicago to Detroit because of clogged gasolene line. The several minor accidents occurring during Captain Rickenbacker's trip from Detroit to Omaha are considered as substantiating Major Schroeder's opinion as to the poor condition of the machine for the projected tour.

"The requested Certificate for Airworthiness was denied this machine".

Re Rickenbacker's Statement

On the other hand, dispatches appearing in the Chicago newspapers on June 11 with regard to the abandonment of his tour quote Captain Rickenbacker as saying:

"There is not a plane in the United States fitted to make such a long tour. The plane we were flying was the nearest approach, and it fell short."

John M. Larsen, who imported in this country a large number of all-metal cabin monoplanes which he placed on sale under the name of JL6 monoplanes, introducing various improvements in their construction, has taken exception to Captain Rickenbacker's statement as quoted by newspapers.

"Captain Rickenbacker was my guest on a flight across the continent and back," said Mr. Larsen. "We made the trip easily. A pilot, a mechanician, and I flew from Omaha to Philadelphia two years ago without stopping, between daylight and dark. We carried much baggage also. The U. S. Air Service is flying many kinds of machines every day, and the Air Mail flies daily between New York and San Francisco with an efficiency performance of 95 per cent."

Mr. Larsen said that reports received by the Aeronautical Chamber of Commerce indicates that more than 250,000 civilians flew in aircraft last year, more than 3,000,000 miles.

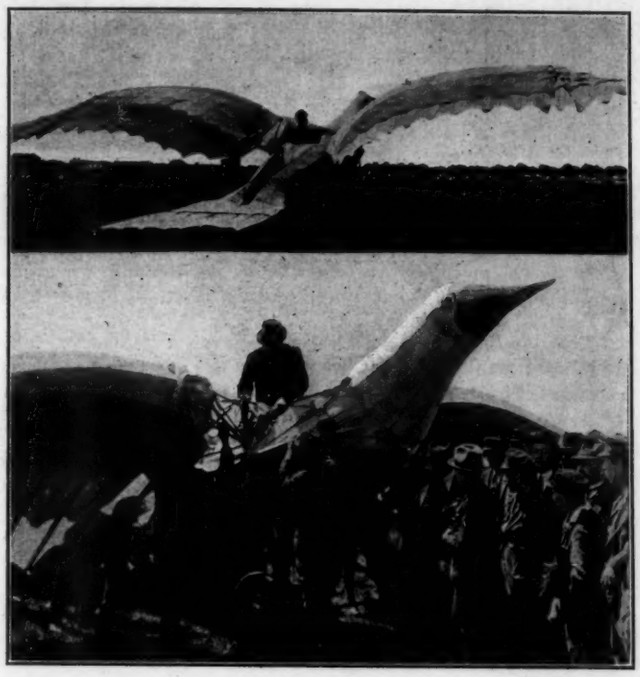


Photo Kadel & Herbert

German flapping wing machine, recently tested near Berlin, which rose 10 ft. above the ground

He, himself, travelled from New York to the Arctic Circle and down into Mexico before returning to Manhattan, in the same plane in which he started. He has travelled more than 300,000 miles by air.

"Most of my flying has been done in planes of similar type as that which Rickenbacker attempted to use," said Mr. Larsen. "The machine he used was an obsolete model, two years old, and one of three or four which had been withdrawn by the Post Office Department and sold. They lacked the improvements I have made on the all-metal monoplanes since first introducing them into this country. Personally, I think Captain Rickenbacker was misquoted or that he made the statement without realizing its full meaning."

Underwriters' Registers

Underwriters' Laboratories notify under June 13, 1922, the following changes in their Aviation Registers:

PILOT REGISTER

Registration of John C. Metzer's Certificate No. 1019 is hereby suspended pending inquiry of circumstances in crash at Ashburn Field, on the afternoon of June 10, in which two passengers were killed, and pilot suffered some injuries. Suspected cause of crash, loss of speed in making first turn.

AIRCRAFT REGISTER

Notice is given of complete destruction in crash of Canadian Curtiss commercial biplane having nationality and registration mark N-ABCJ. Crash occurred at Ashburn Field, Chicago, on the afternoon of June 10, 1922.

A Flight Across the North Pole

According to an Associated Press dispatch from Christiania, Norway, Capt. Roald Amundsen, the Norwegian explorer who recently left Nome, Alaska, on board the ship Maud for an airplane flight to the North Pole, has changed his plans. Originally, as stated in AVIATION, he intended to fly to the pole from an advanced base and return to the latter by air, but his new plan is to fly from Point Barrow across the Pole to Spitsbergen, a distance of approximately 2000 miles in airline.

Capt. Amundsen took with him when he was in New York, a JL monoplane and a Curtiss Oriole. It has been assumed he will use the Oriole for a preliminary flight to establish a base for fuel and other supplies, and then return to his main base for his major attempt in the JL.

Although Captain Amundsen holds a pilot's license he is taking with him two men of long experience in the air. One is Lieut. Oskar Dahl of the Norwegian Navy; the other Lieut. Elmer Fullerton, a Canadian Army aviator, who flew a JL into the Mackenzie River country last August.

The Elisabeth, as the JL has been christened, has been equipped with tanks holding 400 gal. of gasoline, which will be sufficient for a cruising radius of 34 hours, or from 26 to 30 hours at higher speeds. Under reasonably favorable conditions she should be able to make a flight to Spitzbergen in from 22 to 25 hours.

Three landing gears for the Elisabeth were taken by Captain Amundsen. One has wheels for use on land; one has skids for use on ice; the third has pontoons for use on water. The pontoons weigh 600 lb. and will not be taken on the flight across the Pole.

The gasoline carried by the Elisabeth will alone weigh more than two tons. The three men will weigh a little more than 500 lb. in flying kit suitable for the Arctic summer, and oil and food supplies will require perhaps 1000 lb. more. Another 500 lb. may be required for the radio apparatus, the cameras and the scientific instruments.

A Challenge to the World

A group of well known American engineers have reached the conclusion that the era of commercial air navigation on a big scale is at hand and that they have carried experimentation to a point where they are prepared to put their scientific conclusions to a practical test by precipitating an international contest. Details for financing and building a giant seaplane for this purpose have been worked out.

This group has been organized as a trust estate under the title of "The American Eagle," which is also to be the name of the aircraft in question. Rear Admiral Bradley A. Fiske, U. S. N. (retired) is president of the organization, and among the engineers, aeronautical experts and scientists included in the group are Charles W. Burrows, PH. D.; Charles H. Day. A. E. M.; Duval la Chapelle; Frederick Charavay, M. E.; I. S. Kaufman, B. S.; C. E.; I. E. Glover, B. S.; J. H. Steenson; Joshua Ward, B. S., M. E., and Capt. Hugo Sunstedt. Cyril O. Assmus is secretary of the organization.

Captain Sundstedt has been named designing engineer of The American Eagle and his preliminary draft has received tacit acceptance. Captain Sundstedt took up aeronautics with Blériot in 1909 and was later associated with Farman. During the war he was a test pilot for the French Air Service.

Dr. Charles W. Burrows is a consulting engineer in New York with Laboratories in Newark, N. J. He was formerly chief of the magnetic section of the U. S. Bureau of Standards at Washington, in which post he served with professional distinction during the war, having been called to it from the department of physics at the University of Michigan. Dr. Burrows has accepted the post of Administrative Engineer and will pass on every detail of the construction and equipment of The American Eagle.

The board of consulting engineers includes Charles H. Day, who built the first tractor airplane in the United States and, as chief engineer designed the training airplane J1 for the Standard Aircraft Corp. and built the American Handley-Page and Caproni bombers. He is engineer in charge of structure.

On July 2 the American Eagle organization sent over the signature of its honorary president, Admiral Fiske, a cablegram to the air ministries or air departments of Great Britain, France, Italy, Spain, Portugal, Belgium, Norway, Sweden Denmark, Cuba, Mexico, Brazil, Argentine Republic, Chili, Peru, Japan and China, challenging the aeronautical engineers and sportsmen of those powers to enter into a competition with a similar American group to circumnavigate the world with a commercial seaplane of one hundred passenger capacity.

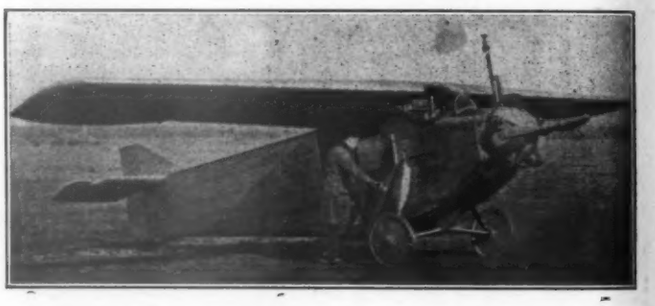
The cablegram sent to the British air ministry, of which those to the other countries are practically duplicates, reads:

"Please convey to representative group of British aeronautical engineers and sportsmen the compliments of American group affiliated in the project to build hydroaeroplane of hundred passenger capacity to circumnavigate the world for advancement of commercial aerial navigation. Stop. Also please convey friendly challenge to compete with British ship. Stop. Conditions of contest and details by mail upon receipt of assurances of competitive interest."

New Junkers Monoplane

The accompanying illustration, reproduced from *The Aeroplane*, shows a small two-seater machine built to the designs of Dr. Junkers of Dessau. Owing to the activities of the Aeronautical Commission of Control—which prohibited the building of aircraft in Germany up to May 5—the machine had to built in another country. Experimental work on this particular type has occupied some fifteen months, experiments with wings arranged at the bottom of the fuselage as in previous Junkers' monoplanes and finally with the present arrangement.

Like the previous Junkers, the machine is of all-metal structure, using the characteristic corrugated sheet duralumin covering. The wing, of thick section, built on multiple tubular spars, is of about 36 ft. span and is built in one piece.



The new Junkers monoplane (Model J16) with a 50-60 hp. Siemens-Halske engine

It is attached to the top of the fuselage, and its leading edge is cut out to accommodate the pilot's head—very much as in the case of the Fokker F3 type. The wing is also recessed on its under surface to accommodate the fuel tank—which is fixed actually to the top of the fuselage behind the pilot, but is enclosed by the wing when this is in position.

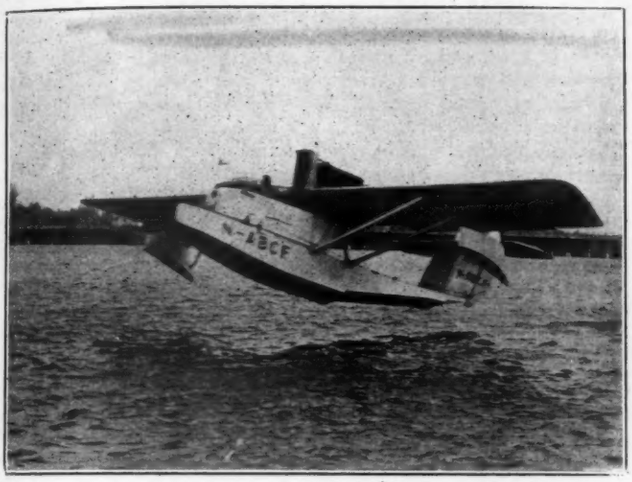
Behind the pilot and under the wing is a passenger cabin, large enough to accommodate two passengers, with a side entrance on the starboard side. The undercarriage consists of two axles, hinged to a sort of rudimentary keel below the breast of the fuselage, a pair of thrust tubes, lying behind the axle, but also approximately horizontal, and a nearly vertical telescopic strut, fitted with shock absorbers.

The engine is a 50-60 hp. Siemens-Halske, the type recently described in AVIATION, which is fitted to the nose of the fuselage and is well cowled in, with only the cylinder heads projecting. The propeller is direct driven from the engine, and carries on its boss a cylindrical nose piece of some length which is meant to protect the engine from contact with the ground should the machine nose over on landing.

Practical Uses of an Air Yacht

The public is more or less familiar with what airplanes have been able to accomplish in the matter of long record flights made between sunrise and sunset—but it has remained for Harold S. Vanderbilt, who is a new recruit to the ranks of aviation enthusiasts, to demonstrate what can be done with a flying boat.

On Monday, June 26, Mr. Vanderbilt played eighteen holes of golf at the National Golf Links, Southhampton. Leaving there at 12:30, he flew, accompanied by three friends, in a Loening Air Yacht piloted by Harry Rogers to 82nd Street and the Hudson River in 52 min. The party lunched at the Columbia Yacht Club, and then went to the Polo Grounds to attend the Yale-Harvard Baseball Game, where they stayed until the end of the game. They then returned to the Columbia Yacht Club and getting into the Air Yacht, flew to Poughkeepsie, where they saw the Navy triumph in the great varsity boat race. The party then flew back to Port Washington, L. I.



The Loening Air Yacht in the act of executing a healthy zoom. This is the type of ship ordered by Vincent Astor and Harold S. Vanderbilt

The machine used is the same one on which Clifford Webster made the record flight from Palm Beach, Fla., to New York last April. The Loening Air Yacht being constructed for Mr. Vanderbilt will be delivered to him by the middle of July. Harry Rogers will be his pilot this summer.

The Air Yacht of Vincent Astor, ordered from the Loening Aeronautical Engineering Corp., was flight tested at Port Washington on June 19 and 20, and when Mr. Astor returned from Europe on June 23, he found his flying boat all ready for him. After his steamer docked, he motored to Port Washington where he went aboard his Air Yacht and flew to New London in time to see the Yale-Harvard Boat Races. On June 26, Mr. Astor flew to Poughkeepsie to attend the boat races there. The trip from New York to Poughkeepsie was made in about 50 min., and the return trip in about 40 min.—most of the trips being made at a cruising speed in the neighborhood of 110 m.p.h.

Mr. Astor's Air Yacht differs only in detail from the original model of the Loening Air Yacht. The seating arrangement has been modified and a complete dual control system installed as Mr. Astor will fly the machine himself from time to time. The door to the cabin, formerly on the side, has been placed in the bow, and many detail arrangements, such as the anchor and other equipment, have been greatly improved upon.

Special lockers for goggles, helmets, etc. have been provided.

Structurally the new flying boats are virtually the same, with the exception that the wings themselves have been increased in area, and in the interior of which all metal fittings have been doubled in thickness in order to give ample margin for the possibility of rusting. The bottom of the hulls are made of an aluminum alloy, treated inside and out with a special marine glue preparation to prevent deterioration from salt water. The new machines also have a larger gasoline capacity—Mr. Astor's Air Yacht carrying enough fuel to fly it nonstop for 500 miles.

The finish of the Astor machine is, of course, specially chosen by the owner. The color is a light gray, with dark grey finishing lines. The wings are treated with pigmented aluminum colored dope and the interior of the cabin is fitted with blue leather upholstery and light varnish woodwork finish.

The owner's private signal—a red star on a white field—flies at the mast, which also serves to hold the speed indicator tubes.

The actual delivery of Mr. Astor's Air Yacht was of considerable interest, because the Loening plant, where this machine was constructed, is equipped with special Ogden type doors, which, when raised up, form a clear opening 46 ft. wide and 18 ft. high. This is the largest opening in any building on Manhattan Island. It was thus possible, after the final assembly of Mr. Astor's machine in the factory, to wheel it out of the doors and on to the dock, where it was hoisted aboard a lighter and brought to Port Washington completely set up and ready for its initial flight tests. This is the first time that a fully set up airplane ready for flight has been brought out of a building in New York City.

Trade Notes

Passenger accommodations to fill a five-passenger flying boat daily from Atlantic City to New York, beginning July 1, have been booked for one month in advance in connection with the regular daily service started on that route by Aeromarine Airways. Their flying cruisers will leave the municipal flying station at 82nd Street, North River every afternoon at 4 o'clock. The flying boats will leave the Curtiss Airport at Atlantic City at 10 o'clock in the morning for New York. The trip between the two cities, made entirely over the water, will require 75 minutes as against three and a half hours by train.

The L.W.F. Engineering Corp. recently completed setting up and testing the first of the thirty-five Martin Bombers to apply on their contract for the government. The first plane was flown by the test pilot, Lieutenant Wade, of McCook Field to the Aeromarine plant at Keyport, N. J., to be used as a model. Work is now in progress by the Curtiss Corp. in setting up at Mitchel Field the first of the Martin Bombers which that corporation is building for the Army. The plane is now practically ready for test. It is understood that the Curtiss Corp. will turn out one Bomber per week, all of these to be set up at Mitchel Field.

The large passenger flying boat, known as the Mayer Amphibian, designed and built by the Cox-Klemin Aircraft Corp., has made a successful flight around the bay of College Point, L. I. The machine seems to get off very quickly and handle well. L. C. Cox took her up for the first trial flight.

John M. Larsen, president of the J. L. Aircraft Corp. of New York, and J. J. Allyne, formerly president of the Aluminum Castings Co. of Cleveland, left for Europe on July 3 for a six to eight weeks tour of the continent. Mr. Larsen has purchased a Farman 12 cyl. car, and will take delivery upon his arrival in France. He and Mr. Allyne will use the new car in visiting the various aeronautical centers of Europe and Great Britian.

Plans for the financing of the new aircraft factory of the International Aircraft Co., formerly Valentine Gephart, Inc., to be located in Kansas City, are now complete, and it is expected that the architect's drawings for the building to be located adjacent to the new air terminal will be submitted in the course of a few weeks. This company contemplates the construction of light commercial aircraft, to be so built that quantity production will bring the cost within the reach of all. The demand for a light commercial ship is growing so rapidly that the companies already building this class of a ship, where price within reason, are unable to supply the demand. There will also be a department devoted to the manufacture of furniture and special cabinet work until such time as the demand for the light ships will tax the plant to capacity.

Weather Bureau and Air Service

In its desire to have its forecasts, warnings, and information made of the greatest possible benefit to aviation and aviation interests, the U. S. Weather Bureau has arranged a plan of cooperation with the Chief of Air Service, U. S. Army, by which it is hoped closer contact may be established between its aviators and Weather Bureau officials in the field.

The plans of this cooperation have been announced by the Chief of Air Service to all commanding officers of Air Service fields in a letter which describes the arrangement.

In this letter the Weather Bureau requests that, in order that the personnel of the Army Air Service and the Weather Bureau may become personally acquainted and by so doing be able to discuss the possibilities and limitations of their respective services, the pilots at the various Air Service fields in their regular training fly to the various Weather Bureau stations shown on the Weather Bureau map which are within a radius of 300 miles from such fields, become acquainted with the personnel at such stations, discuss the problems of the two services, and arrange a system of cooperation. The prevailing weather conditions of the particular section of the country involved should be discussed as bearing upon the work of the Air Service. On these trips the pilots should make notes of the terrain flown over and the landing facilities en route and at the destination.

The Weather Bureau deems it advisable that lectures on the general work of that Bureau, the weather conditions of the particular country where Air Service fields are located, and meteorological subjects pertinent to aviation should be delivered to the Air Service personnel, and the Chief of the Weather Bureau invites applications from Air Service Fields with the purpose in view of making arrangements for the delivery of such lectures.

Aviation forecasts for the six aviation forecast zones of the United States covering the country east of the Mississippi River are broadcasted by Radio from the Naval Radio Station at Arlington at 10:30 a. m. (5950 CW) and at 10:00 p. m. (2650 CW). The Weather Bureau requests that arrangements be made to have radio operators on duty at Air Service stations within these zones receive these forecasts. The night forecast will cover weather conditions in the zone until noon of the following day, whereas the morning forecast will cover weather conditions from noon until midnight.

The Washington *Post* and the Washington *Herald* publish each morning a special forecast furnished them by the Weather Bureau for routes from Washington, D. C., to Norfolk, Va., and from Washington, D. C., to New York City, and arrangements will soon be made for a similar forecast for the route from Washington, D. C., to Dayton, Ohio.

Request for information on weather conditions from Air Service fields, whether made by telegraph or telephone, are to be without expense to the Weather Bureau; but any aviator of the Army who has made a landing at a point not near an Air Service field is permitted to send a prepaid telegram to a Weather Bureau office for the purpose of obtaining the latest forecasts and information as to prevailing winds or conditions. Weather Bureau officials receiving such messages are instructed to reply promptly, giving the best possible information in answer thereto and transmit same to the sender at the expense of the Weather Bureau, such reply messages to be checked "Paid WEA".

Joy Riding in Spokane

A Chinese recently went up as a passenger in a Foster Russell plane at Spokane, Wash. The ship moved so steadily that he thought it was stationary although it was advancing at the rate of a mile a minute.

"Whalla malla, no go?" he demanded after a minute or more of frowning reflection.

"Walla Walla? You want go Walla Walla?" asked Claud Owen, the pilot whose linguistic accomplishment has not reached pidgeon English. "Fifty dollars go to Walla Walla".

" No Walla Walla! No $50. Whalla malla no go? All time stop?"

"Oh," said Owen. " You want me makem go?"

"Yes, makee go like hellee."

At that moment the ship entered a zone of irregular currents. It did not go ahead so fast, but it hopped up and down like a canoe in a seaway. The Chinese held on for dear life and placed his hand alternately to his stomach and head. He evinced relief on returning to land, but stated that he would return some day for a stunt ride.

Two Letters

Editor, AVIATION:—

I note with interest in May 29 issue of AVIATION an article by E. P. Warner entitled "The Design of Wing Spar Sections." The author gives an excellent method for rapidly arriving at a supposedly proper spar section to withstand given bending and direct stresses. An incorrect assumption was made, however, in calculating the allowable fiber stress which resulted in the recommendation of a beam of only 76.5 per cent of the required strength.

It is a recognized fact that a wooden beam of rectangular section will develop a much higher fiber stress in bending than a beam of routed section. This is due to a lack of support of the higher stressed fibers in the routed beam. A comparison between the section described in the article and several tested sections would indicate that the allowable bending stress should not be assumed at more than 67 per cent of the stress that could be developed in a beam of rectangular section. It is always good practice to determine this percentage by a laboratory test of the section in question.

This characteristic of the routed beam does not affect the direct stress materially.

An allowable compression stress of 4300 lb. per square inch and an allowable pure bending stress of 7650 lb. per square inch have been assumed for the material. This is evidently spruce, and in fairness to the author 7900 lb. per square inch will be allowed where the resistance to compression is as high as 4300 lb. per square inch. But this value is applicable to a rectangular section, and only 67 per cent is available in the beam in question. Substituting $67\% \times 7900$ in place of 7650 in equation (2), the fiber stress allowable becomes 4970 lb. per square inch instead of 6520 lb. per square inch.

As the actual stress required to exist was found to be 6490 lb. per square inch, it is apparent that the beam could only develop 4970/6490 or 76.5 per cent of the required strength.

F. E. SEILER, JR.

* * *

Editor, AVIATION:—

In your issue of May 29 Professor Warner describes a method for the design of wing spar sections which results apparently in the direct determination of the area of section required for any given set of conditions. Professor Warner has, I think, neglected the bending effect due to the flexibility of the spar and this is a very important matter when design has to be cut so finely as in the case of airplane structures.

It is assumed by Professor Warner that the bending moment can be calculated as an absolute quantity. Actually the maximum bending moment is given by Perry's Formula

$$M_o = M\left(\frac{Q}{Q-P}\right)$$

where M_o is the maximum bending moment
M is the bending moment due to the lateral load including the load factor.
P is the axial thrust including the load factor.
Q is the Euler critical load for the member $= \pi^2 E A k^2/L^2$

so that the bending moment for which allowance shou'd be made in design contains the unknown quantity A.

In consequence, if this important factor is not to be neglected, the method is not so direct as it appears.

A. J. SUTTON PIPPARD
Ogilvie & Partners, Ltd. London

Owing to Professor Warner's departure for Europe to witness various gliding and soaring competitions it was impossible to obtain from him a reply to the above letters. EDITOR.

ARMY AND NAVY AIR NEWS

Air Service

$14,045,000 for New Fiscal Year—The conference report on the Army Appropriation Bill, 1922-23, agreed to by both Houses of Congress, provides a total of $14,045,000 for the Army Air Service and Aviation Pay.

This sum is apportioned as follows: Air Service, creation and operation, $12,700,000 ($3,500,000 for lighter-than-air craft; $2,053,000 for airplanes; $48,500 of 1920 appropriation is continued for contracts executed prior to June 30, 1920); Office, Chief of Air Service, salaries, $195,000; Aviation increase, Army Officers, $950,000; Aviation increase, Enlisted Men, $200,000 (not available for more than 500 enlisted men on flying status).

The Army air appropriation of the new fiscal year provides about $5,000,000 less than that of the past year, which was $19,200,000.

* * *

A Memorial to Airmen Killed at Love Field—At the entrance to Love Field, Dallas, Tex., there now stands a small granit monument, which was dedicated on May 30 last in memory of the twelve officers and cadets of the Army Air Service who made their last flight at that field. As Love Field is to be abandoned as a flying field and may soon lose its identity, this landmark was erected in their honor. The memorial bears the individual bronze name plates which formerly hung in the Officers' Club at that field.

The dedicatory services were very impressive, and hundreds of people were present to pay their silent respect to the memory of the departed flyers.

The officers and cadets whose name plates are on the monument are as follows: Ist Lieut. Rex Everett Field, 2nd Lieuts. Charles James Hyde, Parker Pruce, John Maxwell Wideham, Arthur Anthony Sego, Jr., Ralph Phelps Collier, Robinson E. Bidwell and Cadets Victor Leon Dennis, John William Albert Insinger, Ralph Eldon Stall and James Forester Dick.

This memorial was the idea of Lieut. Marion G. Putman and was his personal contribution to the memory of these men, many of them having been his friends.

* * *

Crissy Field—Lieut. Robert E. Selff and Wm. C. Goldsborough, A.S., have completed their seven-thousand mile photographic mission, having photographed all available landing field in Northern California and Nevada. They landed at Crissy Field while the circus performance was in full blast and were heartily greeted by their flying "Buddies."

Capts. W. A. Bevan and R. G. Irwin and Lieuts. J. F. Richter and C. R. Weber landed recently at Crissy Field, on a photographic mission from Rockwell Field, photographing the landing fields of Southern California and Nevada. An 18,000 ft. high sandstorm was encountered by them on their flight across Death Valley.

* * *

Sales of Army Planes at Dorr Field—Civilian aviation was recently given a big boost in Florida, "Jennies" with OX5 motors being sold at Dorr Field for $400. These planes have been in storage for some time but are in good condition, and all the planes sold so far have been put in flying condition with very little work and have been flown away. Several reserve officers of the Air Service in the vicinity of Carlstrom have taken advantage of this low price and have purchased planes for their own use. Several Arcadians are making arrangements to purchase a plane.

Army Orders—First Lieut. Wendell H. Brookley, Post Field; First Lieut. Reuben C. Moffat, Framingham, Mass.; and First Lieut. Theodore S. Van Veghten, Bolling Field, have been assigned to McCook Field for duty.

Lt. Col. Seth W. Cook, A.S., relieved from duty as student at the school of the Line, Ft. Leavenworth, Kan., has been assigned to Kelly Field for duty.

Maj. Leonard H. Drennan, A.S., relieved from duty as student at the school of the Line, Ft. Leavenworth, Kan., has been assigned to the Office of the C.A.S. for duty.

Maj. Walter G. Kilner, O.C.A.S.; Maj. Martin F. Scanlon, Bolling Field; Capt. Richard Derby, Carlstrom Field; First Lieut. John A. Macready, McCook Field; First Lieut. James H. Doolittle, Kelly Field, and First Lieut. Clarence B. Lober, Scott Field, have been assigned to McCook Field for duty and course of instruction at the engineering school.

Capt. Henry Pascale and First Lieut. Walter E. Richards, relieved from duty and training at the engineering school McCook Field, are assigned to the Fairfield Air Intermediate Depot for duty.

First Lieut. Fred Austin, A.S., having been found by an Army retiring board incapacitated for active service on account of disability incident thereto, the retirement of Lieutenant Austin from active service is announced.

Capt. Victor Parks, jr., A.S., relieved from training at the Field Officers' School, is assigned to Ft. Benning, Infantry School for duty.

Capt. Gerald E. Brower, A.S., relieved from further duty at the Field Officers' School, is assigned to McCook Field for duty for a course of instruction at the engineering school.

Capt. Horace N. Heisen, A.S., relieved from further duty as student at the Field Officers' School, is assigned to Langley Field for duty.

First Lieut. Byron T. Burt, jr. A.S., relieved from duty at Langley Field, is assigned to Brooks Field, for duty and pilot training.

Capt. Fraser Hale, A.S., relieved from duty at the Field Officers' School, is assigned to Bolling Field for duty.

Maj. William A. Robertson, A.S., having been found incapacitated for active service on account of disability incident thereto, his retirement from active service is announced.

First Lieut. Elmer J. Bowling, relieved from duty at Langley Field, is assigned to Scott Field for duty.

Capt. Thomas S. Voss, relieved from duty at the Field Officers' School, is assigned to Langley Field for duty.

Maj. Paul T. Beck, relieved from duty and training at the Advanced Bombardment School, Kelly Field, is assigned to Brooks Field, for duty.

First Lieut. Bernard J. Tooher, relieved from duty at Carlstrom Field, is assigned to Middletown Air Intermediate Depot for duty.

Capt. Hawthorne C. Gray, relieved from duty at Ross Field, is assigned to Brooks Field for duty.

* * *

Mexican Officers Visit Kelly Field—General Covarrubias, of the Military College of San Jacinto, Mexico, with his staff, visited Kelly Field on May 16 and was highly pleased with the aerial demonstration given at the field and much impressed with the possibilities of bombardment and attack aircraft in use against rebels and bandits in his country. The 2nd Photo Section took a number of pictures of the General's party and they were developed, printed and dried, labelled and presented to the party before they left the field. Four formations of five planes each passed before the reviewing stand in honor of the visitors.

Clark Field—The routine of daily flying about the airdrome at Clark Field, Pampanga, P. I., was pleasantly broken by several flights to Mount Pinatuba for the purpose of searching for a party of Cavalry and Medical officers who made an attempt to scale the peak, which rises some 7000 ft. above sea level. The party desired daily flights for the purpose of picking up their signals in case they met with a mishap. Fortunately, it was not necessary to display any signals, and the flights were without incident.

An airplane trip over and around the mountain readily discloses the almost impenetrable nature of the terrain to be traversed. Surrounded by low lying mountains covered with dense jungle growth and cut by frequent canyons and ravines, the approach to Pinatuba's base is enough to dishearten all but the sturdiest. Flying low over the jungles one sees occasional clusters of little thatched huts of the Negrito tribes, uncivilized but harmless negro members of a pigmy race, said to be the aborigines of these islands. Climbing higher to clear the tops of nearby mountains, one cannot but marvel at the beauty of the scene below. Wonderful tropical vegetation, of a luxuriant green, covers every nook and crag. Even the canyon walls are overgrown with foliage; ferns, airplants, and clinging vines form a beautiful covering to hide the natural baldness of the cliffs. Rising to the peak and circling about it one finds the last five hundred feet rising almost shear. No possible foothold can be discerned from the air. The sides are so steep that only wild cogin grass, vines and a few shrubs find enough foothold to make their position strong enough to withstand the occasional tropical typhoons which rage about them. Perhaps the most curious sight of all are two streams whose source in each case appears to be a spring almost at the top of the mountain, one on each side.

Pinatuba is seldom seen without her crown of mist. The whole sky may be cloudless, yet around her brow she loves to entwine a wisp of silvery vapor, gleaming in the sunshine like a circlet of finely wrought jewels. As one flies over the peak, then "cutting the gun" to coast for hundreds of feet down her side, the thrill experienced can never be forgotten, but if the motor should cut out, forcing a landing to be made in the jungle treetops, well, that's different. A seven-day fight through a tangle of tropical undergrowth would be the least of the difficulties encountered.

* * *

General Patrick Visits Chanute Field—Gen. Mason M. Patrick, Chief of Air Service, and his party recently visited Chanute Field by airplane from Milwaukee. The officers comprising the party were Maj. H. A. Dargue; Maj. P. Van Nostrand; Maj. Wm. C. McChord, Air Officer, 6th Corps Area; Capt. W. C. Ocker and Lieut. H. K. Ramey. General Patrick made a thorough inspection of the field and left on June 2. Major Van Nostrand remained at the field and accompanied Lieut. Frank M. Paul on a cross country trip to Iowa City, Iowa, and thence to Scott Field, Belleville, Ill. Lieut. R. R. Fox also made this trip, the purpose of which was to map an air route from Scott Field to Chanute Field and other points.

* * *

Admiral Fullam Praises Bombardment Pilots—The morale of the Bombardment Group at Kelly Field went up another peg following Rear Admiral Fullam's address in San Antonio recently on the "Possibilities of Aviation," in which he praised the unparallelled feats of the bombardment personnel in the battleship sinking business last summer on the Atlantic coast and foretold some of the amazing possibilities of aerial bombardment. Of course, the members of the Group know all these things, but they like to hear others say them just the same.

* * *

High Parachute Jump at Kelly Field—Master Sergeant Chester W. Kolinski, of the 90th Squadron, stationed at Kelly Field, San Antonio, Tex., made a successful parachute jump on May 24 from an altitude of 10,600 ft., so far the highest jump made by any member of the parachute school during the present course. The training pack chutes were used, and the ship was piloted by Lieut. J. H. Doolittle. Both chutes functioned prefectly.

Naval Aviation

$14,803,560 for Naval Aviation—The Naval Appropration Bill for the fiscal year 1922-23, which was sent to the President on June 28, provides a total of $14,803,560 for naval air activities. Of this sum $14,683,950 is for "Aviation," and $119,610 for "Salaries and Services."

As the bill finally passed it carried $6,537,000 for new aircraft construction and the procurement of equipment, and $280,000 is set aside for the construction and improvement of buildings at the naval air stations Anacostia, D. C.; Pearl Harbor, T. H.; and Qauntico, Va.

Last year's naval air appropriation was $13,413,431.

* * *

Sale of Aviators Clothing—Bids will be received until 11 o'clock a. m. (standard time) July 18, 1922, at the U. S. Central Sales Office, Navy Yard, Washington, D. C., for the following: 2,700 pairs fleeced lined boots, manufactured by A. G. Spaulding & Bro.; Athletic Shoe Co. and Alex Taylor & Co.; 940 pairs hobnailed, heavy leather sole and heel, canvass top brogans manufactured by A. G. Spaulding & Bro.; Abercrombie & Fitch and R. H. Hoskins & Co.; 270 leather, double lined, belted coats 42 in. long. Outer lining of heavy fleeced jersey is removable; 1,350 pairs sheepskin, 3-finger gauntlets with removable all-wool mittens; 83 pairs wading shoes; 280 pairs leather-tex, moleskin lined union suits; 500 pairs belted, furlined union suits; 7 gas masks; 93 life jackets; 340 helmets with ear tabs; 4 black Ever Warm Safety suits, in fair condition; 50 summer flying outfits, in fair condition; 10 pairs fleeced lined boots in good condition; 46 pairs rubber boots, slightly used; 7 gas masks—good condition.

Material is located at Naval Supply Depot, Brooklyn, N. Y.

* * *

Pensacola Naval Air Station—Naval aerial spotters aided the Army Coast Artillery at Fort Pickens in a recent "shoot," a F5L doing the spotting. Spots were received from the plane by the main radio station at the Pensacola Naval Air Station and repeated over land telephone wires to the battery at Fort Pickens with very satisfactory results, a report to the Navy Department states.

The organization of a land plane squadron at Pensacola has been begun; the squadron will be known as VI. The extension of a landing field is under way and so far has proven very good, with ample room. Eleven planes assigned to the squadron have been tested out, with three more to be put through their tests. The squadron has now a complement of 21 men, with the prospects of more in the near future. On July 3, the instruction of seaplane instructors started with lessons on land machines.

A short time ago the station gave a vaudeville performance in honor of Rear Admiral Moffett. During his course of instruction as Naval Aviation Observer, Admiral Moffett has made flights to New Orleans and back, and to Mobile, acting as navigator for the planes in the squadron.

* * *

Hampton Roads Naval Air Station—Airship C7 made nine flights during the past week, a total of 16 hr. 59 min. flying time. The crew transferred by means of Jacob's ladder and water ballast was picked up successfully by the ship while in the air. No further details of this unusual feat are available, but it is understood that the crew of the airship climbed down the ladder to the flying field, or to a boat, while the new crew mounted the ladder to replace those relieved, carrying water ballast up the ladder as they climbed aboard.

In heavier-than-air work it is reported that 28 flights were made, totaling 24 hr. 45 min. flying time. A service test of plywood wings on an MF is being conducted, but details of the scheme and trials were not announced. Six F5L's were flown from Hampton Roads to Pensacola, leaving the station on June 22.

An automatic trap for projecting clay pigeons into the air for shot gun practice has been installed at Hampton Roads station for the use of the naval pilots and observers, five-hundred rounds being allowed each pilot per year.

Naval Orders—Lt. Comdr. Cecil Y. Johnston, det. command Nav. Air Sta. Anacostia, D. C.; to duty Air Sqds. Atl. Flt.

Lieut. George D. Price, det. Nav. Air Sta. Pensacola, Fla.; to temp. duty Bu. Ordnance, Navy Dept., Washington, D. C.

Ens. Phil L. Haynes, det. Nav. Air Sta. Hampton Roads, Va.; to duty Air Sqds. Atl. Flt.

Lieut. James H. Stevens, det. Nav. Air Sta. Pensacola, Fla.; to duty Air Sqds. Pac. Flt.

Lieut. William D. Thomas, det. Air Sqds. Atl. Flt.; to duty Nav. Air Sta. Anacostia, D. C.

Ens. Wallace R. Hollingsworth, det. U.S.S. Mississippi; to Air Sqds. Pac. Flt.

Ens. Edgar W. Sheppard, det. U.S.S. Wright; to temp. duty Nav. Air Sta. Pensacola, Fla.

Ens. John E. Wood (S.C.), det. Supply Corps School of Application, Navy Dept.; to duty Nav. Aircraft Factory, Philadelphia, Pa.

Lieut. Arthur C. Miles (C.C.), det. Newport News Shipbuilding and Drydock Co., Newport News, Va.; to temp. duty Nav. Air Sta. Pensacola, Fla.

Lieut. Jas. R. Kyle, orders to Nav. Aircraft Factory, Phila. revoked; det. Navy Yard Washington to Bu. Aeronautics.

Lieut. Alvin O. Preil, RF, det. Nav. Air Sta. Hampton Roads, Va.; to HDAS.

Lieut. Francis H. Mail, det. Nav. Aircraft Factory, Phila.; to duty Bu. Aeronautics.

Lieut. Jas. M. Shoemaker, det. Nav. Aircraft Factory, Phila.; to duty Bu. Aeronautics.

Ens. Austin K. Doyle and Ens. Norman B. Hopkins, det. R/S New York; to temp. duty under instruction in heavier-than-air craft Nav. Air Sta. Pensacola, Fla.

Capt. Walter H. Sitz, USMC, det. Washington Navy Yard; to duty Bu. Aeronautics.

* * *

F5L's in Long Squadron Cruise—The safe arrival of twelve F5L seaplanes which flew from Philadelphia, Pa., to Pensacola, Fla., has just been reported to the Bureau of Aeronautics of the Navy Department by the Naval Air Station at Pensacola.

This flight of twelve large scout planes over a distance of approximately 1000 miles without mishap of any kind is a high tribute to the efficiency and reliability of material and personnel and demonstrates conclusively the mobile qualities of Naval Aviation units. The flight of the planes to Pensacola from the Aircraft Factory at Philadelphia was undertaken in the interest of economy. The alternate procedure would have been packing for shipment and transportation by rail at a cost of between $3,000 and $5,000 per plane.

Simultaneous with the dispatch of the seaplanes to Pensacola, the U.S.S. Wright, fleet tender of the Atlantic Fleet Air Detachment, was ordered to Pensacola and will return with pilots and aviation personnel who took part in the flight. The course of the air squadrons was along the Atlantic coast line to the northern part of Florida thence westward across the Florida peninsula to Pensacola.

The large scouting seaplanes will be placed in service at the air station in Pensacola for training purposes.

Marine Aviation

Captain Hamilton Killed—Capt. George W. Hamilton, Marine Corps, Pilot, a native of Washington and Gunnery Sergt. G. R. Martin of Buffalo, Observer, were killed in an airplane crash while flying over the Gettysburg Battle Field, on June 26 during Marine Corps maneuvers.

According to Capt. John Craige, Aide to General LeJeune, who had just stepped out of a Marine Corps plane when he heard a formation of five planes overhead, Captain Hamilton, the leader in a DH4 signalled that he was about to land and cut his engine. From a height of about 500 ft. the plane went into a slow spin from which the pilot was seen to partially regain control, apparently about 100 ft. from the ground. "As the plane started out of the spin," Captain Craige says, "descending in a low downward curve, I heard the engine start up with a roar, but feared for the safety of the fliers, they were so near the ground. When about 100 ft. off the ground Hamilton pulled the stick back to level off, and would have been safe with 50 or 100 ft. more altitude, but just as the plane started to nose upward it struck the ground and was smashed to kindling."

Captain Hamilton was killed instantly, and Sergeant Martin died at the Gettysburg hospital where he was rushed.

Following funeral ceremonies at Central High School, where Hamilton graduated in 1912 with honors in practically every line of athletics, he was buried at Arlington, on June 29 with full military honors, although, at the request of his sister, no planes flew over the National Cemetery in connection with the services.

Captain Hamilton, who became a Major in the World War, was an exceptionally fine and genial fellow in the estimation of, not only the officers of his Corps from General LeJeune down, but among the enlisted men and his host of friends and classmates at the local high school and in Washington. His ability and heroism in the Marine Corps since he was first commissioned in 1916 through the World War and with the Fifth Marines of which outfit he commanded the 49th company, is shown by the many decorations and citations listed in the records of the Corps.

He was promoted to Captain in 1917, served in the Verdun Sector and Chateau Thierry and Soissons, in 1918. As second in command of the First Battalion of the Famous Fifth from July 8 he saw active service in the Marbache Sector (Pont-a-Mousson) from Aug. 7 to 16, having become a temporary Major on July 1. From Sept. 12 to 16 he was in the St. Mihiel offensive and in the Meuse-Argonne drive from Nov. 1 to 11, going to the Rhine later in the year, where he remained until May 1919.

After serving in Washington at Marine Headquarters and in Haiti and Santo Domingo, for several months, Captain Hamilton resigned in July 1919. He reentered the Aviation Branch of the Marine Corps in March 1922, however, and trained in flying at Pensacola and Quantico, being on duty at the latter station when he was killed.

He was honor graduate of the Marine Corps Officers School and had been awarded the Distinguished Service Cross, the Croix de Guerre with a palm, the Navy Cross and the Legion of Honor, with other decorations and many citations for his heroism in France.

Coming Aeronautical Events

AMERICAN

Aug. 4-13 — Aviation Meet, Aircraft Exhibition and Aeronautical Congress, Chicago.

Oct. 7 — Detroit Aerial Water Derby, Detroit. (Curtiss Marine Flying Trophy Competition.)

Oct. 12-14 — Detroit Aerial Derby, Detroit. (Pulitzer Trophy Race.)

FOREIGN

August — Coupe Jacques Schneider. (Seaplane speed race.) Naples, Italy.

August — Tyrrhenian Trophy. (International Seaplane Competition.) Naples, Italy.

Aug. 6 — Gordon Bennett Balloon Race, Geneva, Switzerland.

Aug. 6-20 — Soaring and Gliding Competition, Clermont-Ferrand, France.

Aug. 9-24 — Soaring and Gliding Competition, Gersfeld, Germany.

September — Grand Prize of Italy. (International Airplane Competition.) Milan, Italy.

Sept. 22 — Coupe Henri Deutsch de la Meurthe. (Airplane speed race.) France.

American elimination trials, if required, to be held about Aug. 15, at Mitchel Field, L. I.

October — International Parachute Competition. Rome, Italy.

Foreign News

Italy—On May 31 a petition for bankruptcy was presented by the creditors of the S.A.I.A.M. Ltd. to the County Court of Milan. Its general manager, Comdr. Mapelli, is abroad.

An airship of the "O" type has been sold to Argentine Republic; twenty Ansaldo 300 hp. have been bought by the Polish government and 100 Sva and Ansaldo (300 hp.) airplanes were purchased by the Russian delegation in Italy for the Russian government.

The post of aeronautical attaché will be reinstituted in a short time at Athens, Greece.

Following the report made by the "Board of Admirals" regarding the influence of aircraft on sea power, the Hon. De Vito, Minister of Marine, has raised the naval air estimates from 6,000,000 Lire to 60,000,000 Lire. The revised estimates greatly exceed those of the French navy. In the meantime the navy has ordered twenty Macchi 18 flying boats, and orders for some Savoia 16 bis boats are to follow.

An ambulance airplane is under construction in the Gabardini works at Cameri. The Savoia Co. is building two new types, the S24 and S25. The Breda Co. has in construction a four-engined 600 hp. machine of the Ca5 type and a three-engined airplane designed by the Eng. Abate. Ansaldo is building an Ansaldo 300 hp. type T. Fiat has in construction the new type AL designed by the Eng. Rosatelli.

Through the initiative of Count Giovanni Bonmartini, "L'Aerea", an aeronautical information agency was recently formed in Rome. The agency issues one or two bulletins daily which are sent to all the newspapers and news agencies of Italy.

A new aeronautical periodical has appeared in Milan under the name *Il Giornale dell'Aviazione*, and an illustrated aviation magazine is to be published shortly by the E. I. A. company under the title *Rivista d'Aeronautica*. The E. I. A. already publishes the aeronautical weekly newspaper *Gazzetta dell'Aviazione*, of which Attilio Longoni is the editor.

* * *

Great Britain—The London *Evening News* gives an account of the successful trial flight recently of the Vickers "Vulcan" airplane. This machine has been bought by the Instone Air Line, London. Eight people are carried in a luxurious cabin, the roof of which can only be reached by a tall man standing with his arm outstretched. Comfortable red leather seats are fitted, and these are made to fold up flush with the sides so that all the room can be used for cargo. The pilot sits right up in the nose of the plane, whence he can obtain a clear view. The machine requires very little preliminary run on the take off, climbs steeply, and lands at very slow speed. It is fitted with a 360 hp. Rolls-Royce engine and travels at a speed of 100 m.p.h.

The Cunard Co. has arranged with the Compagnie Aérienne Francaise for an airplane service to connect with the arrival and departure of the giant express Cunarders calling at Cherbourg. By using this air service, passengers will save at least five hours in the journey to and from the French capital.

* * *

Netherlands—Dutch florists have adopted the expedient of sending their flowers daily to the London market by airplane. The flowers are cut at night, packed early the next morning, and sent by automobile from the Boskoop flower growing district to the Waalhaven airdome near Rotterdam, carried by Fokker airplanes they arrive at Croydon, England, at 1:30 p. m., and from there are despatched by motor-car to the London florists. Boskoop flowers are thus put on sale simultaneously in the London and Dutch shops. About 100 kg. of flowers per day are to be transported in this way.

The airplane manufacturing industry in the Netherlands is being extended by the establishment at Rotterdam of a new concern, to be known as the National Aircraft Manufacturing Co. (N. V. Nationale Vliegtuig Industrie). This enterprise is to be financed by Dutch capital exclusively and is to have a new factory built especially for airplane production.

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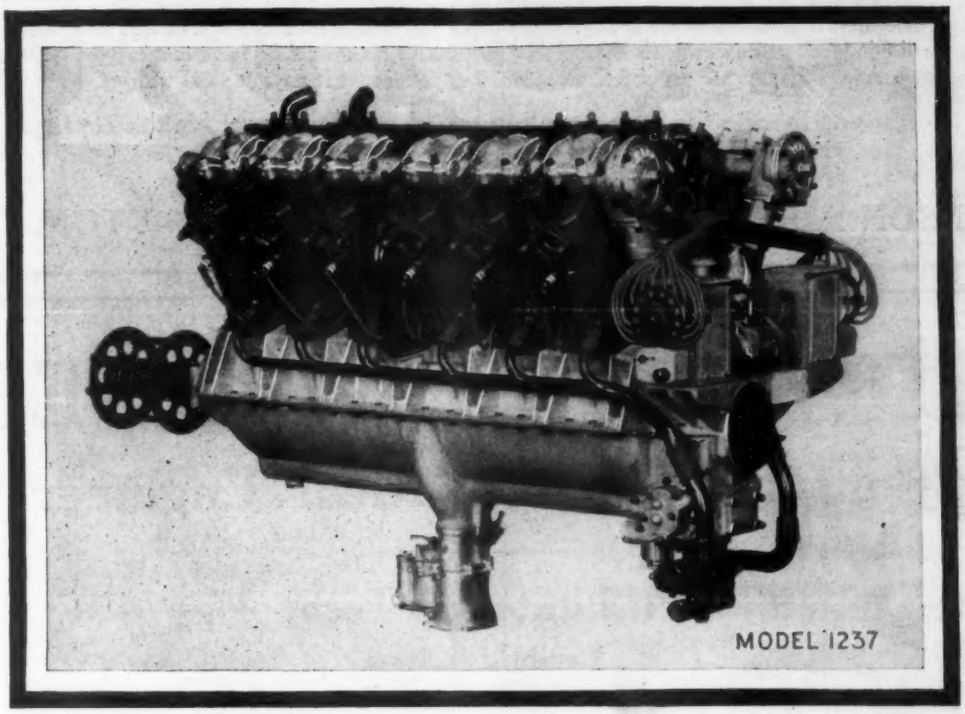

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